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**University of Copenhagen**
**Faculty of Life Science**
**Thorvaldsensvej 40, Aud 3-01**
**8:30-17:30**

# MARKERS OF CARDIAC REMODELING ARE UPREGULATED IN PORCINE HEARTS FOLLOWING INFECTIONS WITH *CHLAMYDIA PNEUMONIAE* AND INFLUENZA

Sophia Gry Moesgaard, Lisbeth Høier Olsen, Axel Kornerup Hansen, Erkki Pesonen, Petru Liuba, Malene Muusfeldt Birck.

Chronic infections and high cholesterol diet have been suggested as risk factors for cardiovascular disease development. The aim of this study was to measure the expression of mRNA markers in hearts from pigs exposed to different diets and pathogens.

Forty-two 8 week old pathogen-controlled Göttingen minipigs were included in the study. The minipigs were randomly assigned to repeated inoculation of either PBS (group I+II = controls), *Chlamydia pneumonia (CPn)* (group III+IV) or both *CPn* and influenza virus (group V+VI) every 3 weeks. Group I+III+V were fed a standard minipig chow diet, while group II+IV+VI were fed a high-cholesterol diet. At the age of 19 weeks, pigs were euthanized and samples were taken from the posterior mitral valve leaflet and the left ventricular cranial papillary muscle and processed for real time RT-PCR mRNA analysis using the LightCycler system. Beta actin was used as reference gene.

The endothelial nitric oxide synthase (eNOS) expression increased in both heart valve and myocardium following both infections. The inducible NOS (iNOS) expression increased in the myocardium following both infections, whereas the iNOS expression in the heart valve did not change. The matrix metalloproteinase 2 (MMP2) expression increased in the heart valves following both infections, whereas the MMP2 expression of the myocardium did not change. None of the mRNA markers were influenced by the diets.

In conclusion, the infections increased the mRNA markers of cardiac remodeling. Further correlation with histopathologic changes and protein expression might help explain the background for these changes.